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SEQUENCE LISTING

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<120> NOVEL STEROID-ACTIVATED NUCLEAR RECEPTORS AND
USES THEREFOR

<130> 088802-5203

<140> 09/458,366

<141> 1999-12-09

<150> 09/227,718

<151> 1999-01-08

<150> 09/005,286

<151> 1998-01-09

<160> 44

<170> PatentIn Ver. 2.1

<210> 1

<211> 2068

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (583)..(1887)

<400> 1

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cagactgatg aaatgcgctc agaattactt agacaaagcg gatatttgcc actctcttcc 120
ccttttcctg tgtttttgta gtgaagagac ctgaaagaaa aaagtaggga gaacataatg 180
agaacaaata cggtaatctc ttcatttgct agttcaagt ctggacttgg gacttaggag 240
gggcaatgga gccgcttagt gcctacatct gacttggact gaaatatagg tgagagacaa 300
gattgtctca tatccgggga aatcataacc tatgactagg acgggaagag gaagcactgc 360
ctttacttca gtgggaatct cggcctcagc ctgcaagcca agtggttcaca gtgagaaaag 420
caagagaata agctaatact cctgtcctga acaaggcagc ggctccttgg taaagctact 480
ccttgatcga tcctttgcac cggattgttc aaagtggacc ccaggggaga agtcggagca 540
aagaacttac caccaagcag tccaagaggc ccagaagcaa ac ctg gag gtg aga 594
Met Glu Val Arg

1

ccc aaa gaa agc tgg aac cat gct gac ttt gta cac tgt gag gac aca 642
Pro Lys Glu Ser Trp Asn His Ala Asp Phe Val His Cys Glu Asp Thr
5 10 15 20

gag tct gtt cct gga aag ccc agt gtc aac gca gat gag gaa gtc gga	690
Glu Ser Val Pro Gly Lys Pro Ser Val Asn Ala Asp Glu Glu Val Gly	
25 30 35	
ggt ccc caa atc tgc cgt gta tgt ggg gac aag gcc act ggc tat cac	738
Gly Pro Gln Ile Cys Arg Val Cys Gly Asp Lys Ala Thr Gly Tyr His	
40 45 50	
ttc aat gtc atg aca tgt gaa gga tgc aag ggc ttt ttc agg agg gcc	786
Phe Asn Val Met Thr Cys Glu Gly Cys Lys Gly Phe Phe Arg Arg Ala	
55 60 65	
atg aaa cgc aac gcc cgg ctg agg tgc ccc ttc cgg aag ggc gcc tgc	834
Met Lys Arg Asn Ala Arg Leu Arg Cys Pro Phe Arg Lys Gly Ala Cys	
70 75 80	
gag atc acc cgg aag acc cgg cga cag tgc cag gcc tgc cgc ctg cgc	882
Glu Ile Thr Arg Lys Thr Arg Arg Gln Cys Gln Ala Cys Arg Leu Arg	
85 90 95 100	
aag tgc ctg gag agc ggc atg aag aag gag atg atc atg tcc gac gag	930
Lys Cys Leu Glu Ser Gly Met Lys Lys Glu Met Ile Met Ser Asp Glu	
105 110 115	
gcc gtg gag gag agg cgg gcc ttg atc aag cgg aag aaa agt gaa cgg	978
Ala Val Glu Glu Arg Arg Ala Leu Ile Lys Arg Lys Lys Ser Glu Arg	
120 125 130	
aca ggg act cag cca ctg gga gtg cag ggg ctg aca gag gag cag cgg	1026
Thr Gly Thr Gln Pro Leu Gly Val Gln Gly Leu Thr Glu Glu Gln Arg	
135 140 145	
atg atg atc agg gag ctg atg gac gct cag atg aaa acc ttt gac act	1074
Met Met Ile Arg Glu Leu Met Asp Ala Gln Met Lys Thr Phe Asp Thr	
150 155 160	
acc ttc tcc cat ttc aag aat ttc cgg ctg cca ggg gtg ctt agc agt	1122
Thr Phe Ser His Phe Lys Asn Phe Arg Leu Pro Gly Val Leu Ser Ser	
165 170 175 180	
ggc tgc gag ttg cca gag tct ctg cag gcc cca tcg agg gaa gaa gct	1170
Gly Cys Glu Leu Pro Glu Ser Leu Gln Ala Pro Ser Arg Glu Glu Ala	
185 190 195	
gcc aag tgg agc cag gtc cgg aaa gat ctg tgc tct ttg aag gtc tct	1218
Ala Lys Trp Ser Gln Val Arg Lys Asp Leu Cys Ser Leu Lys Val Ser	
200 205 210	
ctg cag ctg cgg ggg gag gat ggc agt gtc tgg aac tac aaa ccc cca	1266
Leu Gln Leu Arg Gly Glu Asp Gly Ser Val Trp Asn Tyr Lys Pro Pro	
215 220 225	
gcc gac agt ggc ggg aaa gag atc ttc tcc ctg ctg ccc cac atg gct	1314
Ala Asp Ser Gly Gly Lys Glu Ile Phe Ser Leu Leu Pro His Met Ala	
230 235 240	

gac atg tca acc tac atg ttc aaa ggc atc atc agc ttt gcc aaa gtc	1362
Asp Met Ser Thr Tyr Met Phe Lys Gly Ile Ile Ser Phe Ala Lys Val	
245 250 255 260	
atc tcc tac ttc agg gac ttg ccc atc gag gac cag atc tcc ctg ctg	1410
Ile Ser Tyr Phe Arg Asp Leu Pro Ile Glu Asp Gln Ile Ser Leu Leu	
265 270 275	
aag ggg gcc gct ttc gag ctg tgt caa ctg aga ttc aac aca gtg ttc	1458
Lys Gly Ala Ala Phe Glu Leu Cys Gln Leu Arg Phe Asn Thr Val Phe	
280 285 290	
aac gcg gag act gga acc tgg gag tgt ggc cgg ctg tcc tac tgc ttg	1506
Asn Ala Glu Thr Gly Thr Trp Glu Cys Gly Arg Leu Ser Tyr Cys Leu	
295 300 305	
gaa gac act gca ggt ggc ttc cag caa ctt cta ctg gag ccc atg ctg	1554
Glu Asp Thr Ala Gly Gly Phe Gln Gln Leu Leu Glu Glu Pro Met Leu	
310 315 320	
aaa ttc cac tac atg ctg aag aag ctg cag ctg cat gag gag gag tat	1602
Lys Phe His Tyr Met Leu Lys Lys Leu Gln Leu His Glu Glu Glu Tyr	
325 330 335 340	
gtg ctg atg cag gcc atc tcc ctc ttc tcc cca gac cgc cca ggt gtg	1650
Val Leu Met Gln Ala Ile Ser Leu Phe Ser Pro Asp Arg Pro Gly Val	
345 350 355	
ctg cag cac cgc gtg gtg gac cag ctg cag gag caa ttc gcc att act	1698
Leu Gln His Arg Val Val Asp Gln Leu Gln Glu Gln Phe Ala Ile Thr	
360 365 370	
ctg aag tcc tac att gaa tgc aat cgg ccc cag cct gct cat agg ttc	1746
Leu Lys Ser Tyr Ile Glu Cys Asn Arg Pro Gln Pro Ala His Arg Phe	
375 380 385	
ttg ttc ctg aag atc atg gct atg ctc acc gag ctc cgc agc atc aat	1794
Leu Phe Leu Lys Ile Met Ala Met Leu Thr Glu Leu Arg Ser Ile Asn	
390 395 400	
gct cag cac acc cag cgg ctg ctg cgc atc cag gac ata cac ccc ttt	1842
Ala Gln His Thr Gln Arg Leu Leu Arg Ile Gln Asp Ile His Pro Phe	
405 410 415 420	
gct acg ccc ctc atg cag gag ttg ttc ggt atc aca ggt agc tga	1887
Ala Thr Pro Leu Met Gln Glu Leu Phe Gly Ile Thr Gly Ser	
425 430	

gtggctgtcc ttgggtgaca cctccgagag gtagttagac ccagagccct ctgagtcgcc 1947

actccccgggc caagacagat ggacactgcc aagagccgac aatgccctgc tggcctgtct 2007

ccctaggggaa ttctgtctat gacagctggc tagcattcct caggaaggac atggggtgcc 2067

c 2068

<210> 2
 <211> 434
 <212> PRT
 <213> Homo sapiens

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 1 5 10 15
 Cys Glu Asp Thr Glu Ser Val Pro Gly Lys Pro Ser Val Asn Ala Asp
 20 25 30
 Glu Glu Val Gly Gly Pro Gln Ile Cys Arg Val Cys Gly Asp Lys Ala
 35 40 45
 Thr Gly Tyr His Phe Asn Val Met Thr Cys Glu Gly Cys Lys Gly Phe
 50 55 60
 Phe Arg Arg Ala Met Lys Arg Asn Ala Arg Leu Arg Cys Pro Phe Arg
 65 70 75 80
 Lys Gly Ala Cys Glu Ile Thr Arg Lys Thr Arg Arg Gln Cys Gln Ala
 85 90 95
 Cys Arg Leu Arg Lys Cys Leu Glu Ser Gly Met Lys Lys Glu Met Ile
 100 105 110
 Met Ser Asp Glu Ala Val Glu Glu Arg Arg Ala Leu Ile Lys Arg Lys
 115 120 125
 Lys Ser Glu Arg Thr Gly Thr Gln Pro Leu Gly Val Gln Gly Leu Thr
 130 135 140
 Glu Glu Gln Arg Met Met Ile Arg Glu Leu Met Asp Ala Gln Met Lys
 145 150 155 160
 Thr Phe Asp Thr Thr Phe Ser His Phe Lys Asn Phe Arg Leu Pro Gly
 165 170 175
 Val Leu Ser Ser Gly Cys Glu Leu Pro Glu Ser Leu Gln Ala Pro Ser
 180 185 190
 Arg Glu Glu Ala Ala Lys Trp Ser Gln Val Arg Lys Asp Leu Cys Ser
 195 200 205
 Leu Lys Val Ser Leu Gln Leu Arg Gly Glu Asp Gly Ser Val Trp Asn
 210 215 220
 Tyr Lys Pro Pro Ala Asp Ser Gly Gly Lys Glu Ile Phe Ser Leu Leu
 225 230 235 240
 Pro His Met Ala Asp Met Ser Thr Tyr Met Phe Lys Gly Ile Ile Ser
 245 250 255
 Phe Ala Lys Val Ile Ser Tyr Phe Arg Asp Leu Pro Ile Glu Asp Gln
 260 265 270

Ile Ser Leu Leu Lys Gly Ala Ala Phe Glu Leu Cys Gln Leu Arg Phe
 275 280 285
 Asn Thr Val Phe Asn Ala Glu Thr Gly Thr Trp Glu Cys Gly Arg Leu
 290 295 300
 Ser Tyr Cys Leu Glu Asp Thr Ala Gly Gly Phe Gln Gln Leu Leu Leu
 305 310 315 320
 Glu Pro Met Leu Lys Phe His Tyr Met Leu Lys Lys Leu Gln Leu His
 325 330 335
 Glu Glu Glu Tyr Val Leu Met Gln Ala Ile Ser Leu Phe Ser Pro Asp
 340 345 350
 Arg Pro Gly Val Leu Gln His Arg Val Val Asp Gln Leu Gln Glu Gln
 355 360 365
 Phe Ala Ile Thr Leu Lys Ser Tyr Ile Glu Cys Asn Arg Pro Gln Pro
 370 375 380
 Ala His Arg Phe Leu Phe Leu Lys Ile Met Ala Met Leu Thr Glu Leu
 385 390 395 400
 Arg Ser Ile Asn Ala Gln His Thr Gln Arg Leu Leu Arg Ile Gln Asp
 405 410 415
 Ile His Pro Phe Ala Thr Pro Leu Met Gln Glu Leu Phe Gly Ile Thr
 420 425 430

Gly Ser

<210> 3
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Putative SXR
 response element from the steroid hydroxylase,
 rCYP3A1

<400> 3
 tagacagttc atgaagttca tctac

25

<210> 4
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Putative SXR
 response element from the steroid hydroxylase,
 rCYP3A2

<400> 4
 taagcagttc ataaagttca tctac 25

<210> 5
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Putative SXR
 response element from the steroid hydroxylase,
 rUGT1A6

<400> 5
 actgtagttc ataaagttca catgg 25

<210> 6
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Putative SXR
 response element from the steroid hydroxylase,
 rbCYP2C1

<400> 6
 caatcagttc aacagggttc accaat 26

<210> 7
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Putative SXR
 response element from the steroid hydroxylase,
 rP450R

<400> 7
 cacaggtgag ctgaggccag cagcaggtcg aaa 33

<210> 8
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Putative SXR
 response element from the steroid hydroxylase,
 rCYP2A1

<400> 8
 gtgcaggttc aactggaggt caacatg 27

<210> 9
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Putative SXR
 response element from the steroid hydroxylase,
 rCYP2A2

<400> 9
 gtgctgggttc aactggaggt cagtatg

27

<210> 10
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Putative SXR
 response element from the steroid hydroxylase,
 rCYP2C6

<400> 10
 agtctagttc agtgggggtt cagtctt

27

<210> 11
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Putative SXR
 response element from the steroid hydroxylase,
 hCYP2E1

<400> 11
 gagatgggttc aaggaagggt cattaac

27

<210> 12
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Direct repeat
 with spacer of 0 nucleotides

<400> 12
 catagtcagg tcaaggtcag atcaac

26

<210> 13
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Direct repeat
 with spacer of 1 nucleotides

<400> 13
 catagtcagg tcataggtca gatcaac 27

<210> 14
 <211> 28
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Direct repeat
 with spacer of 2 nucleotides

<400> 14
 catagtcagg tcaataggtc agatcaac 28

<210> 15
 <211> 29
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Direct repeat
 with spacer of 3 nucleotides

<400> 15
 catagtcagg tcatataggt cagatcaac 29

<210> 16
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Direct repeat
 with spacer of 4 nucleotides

<400> 16
 catagtcagg tcatataagg tcagatcaac 30

<210> 17
 <211> 31
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Direct repeat
 with spacer of 5 nucleotides

 <400> 17
 catagtcagg tcatatatag gtcagatcaa c 31

 <210> 18
 <211> 33
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Direct repeat
 with spacer of 6 nucleotides

 <400> 18
 catagtcagg tcatatataa ggtcaagatc aac 33

 <210> 19
 <211> 33
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Direct repeat
 with spacer of 7 nucleotides

 <400> 19
 catagtcagg tcatatatat aggtcagatc aac 33

 <210> 20
 <211> 36
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Direct repeat
 with spacer of 10 nucleotides

 <400> 20
 catagtcagg tcatatatat ataaggtcag atcaac 36

 <210> 21
 <211> 41
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Direct repeat
 with spacer of 15 nucleotides

 <400> 21
 catagtcagg tcatagtagt agtagtagag gtcagatcaa c 41

<210> 22
 <211> 17
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Example of a
 response element suitable for practice of the
 invention method

<220>
 <221> modified_base
 <222> (7)..(11)
 <223> This region may encompass 5, 4 or 3 nucleotides,
 independently selected from a, c, t or g

<400> 22
 agttcannnn ntgaact

17

<210> 23
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Example of a
 response element suitable for practice of the
 invention method

<220>
 <221> modified_base
 <222> (7)..(12)
 <223> a, c, t or g

<400> 23
 tgaactnnnn nnagggtca

18

<210> 24
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 24
 tgaactcaaa ggagggtca

18

<210> 25
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Inverted
 repeat response element with spacer of 0
 nucleotides

<400> 25
 agcttaggtc atgaccta 18

<210> 26
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Inverted
 repeat response element with spacer of 1
 nucleotides

<400> 26
 agcttaggtc agtgaccta 19

<210> 27
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Inverted
 repeat response element with spacer of 2
 nucleotides

<400> 27
 agcttaggtc acgtgaccta 20

<210> 28
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Inverted
 repeat response element with spacer of 3
 nucleotides

<400> 28
 agcttaggtc acagtacct a 21

<210> 29
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Inverted
 repeat response element with spacer of 4
 nucleotides

<400> 29
 agcttaggtc acatgtgacc ta 22

<210> 30
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Inverted
 repeat response element with spacer of 5
 nucleotides

<400> 30
 agcttaggtc acactgtgac cta 23

<210> 31
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Inverted
 repeat response element with spacer of 6
 nucleotides

<400> 31
 agctttgaac tcaaaggagg tca 23

<210> 32
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: IR-M

<400> 32
 agcttacgtc atgacgta 18

<210> 33
 <211> 33
 <212> DNA
 <213> Homo sapiens

<400> 33
 tagaatatga actcaaagga ggtcagtgag tgg 33

<210> 34
<211> 33
<212> DNA
<213> Homo sapiens

<400> 34
tagaatatga actcaaagga ggtaagcaaa ggg 33

<210> 35
<211> 32
<212> DNA
<213> Homo sapiens

<400> 35
tagaatatta actcaatgga ggcagtgagt gg 32

<210> 36
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide for PCR

<400> 36
gagcaattcg ccattactct gaagt 25

<210> 37
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide for PCR

<400> 37
gtccttgagg tcttctacct ttctc 25

<210> 38
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide for PCR

<400> 38
gacgatttgg atctggacat gttgg 25

<210> 39
 <211> 15
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide for PCR

<400> 39
 tgaacttcat gaact 15

<210> 40
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 40
 gttttcatct gagcgccat cagct 25

<210> 41
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Illustrative
 peptide

<400> 41
 Arg Gly Lys Thr Cys Ala
 1 5

<210> 42
 <211> 15
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 42
 tggtcttcat gttct 15

<210> 43
 <211> 15
 <212> DNA
 <213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 43
acaacttcat gaact

15

<210> 44
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Example of a
response element suitable for practice of the
invention method

<220>
<221> modified_base
<222> (7)..(11)
<223> This region may encompass 5, 4 or 3 nucleotides,
independently selected from a, c, t or g

<400> 44
aggtcannnn naggtca

17